

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	10	TUAN NEAR ROCKY	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:43
L2	1	NOTH NEAR ULRICH	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:43
L3	129	(mesenchymal ADJ stem ADJ cell) and trabecular	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:52
L4	109	((mesenchymal ADJ stem ADJ cell) and trabecular) and (isolated purified)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:48
L5	46	I3 and (bone WITH fragment)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:48
L6	34	I4 and (bone WITH fragment)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:48
L7	27	I5 and collagenase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:49
L8	16	I6 and collagenase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:49
L10	95	(mesenchymal ADJ stem ADJ cell) SAME collagenase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:52
L11	72	(mesenchymal ADJ stem ADJ cell) WITH collagenase	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:55
L12	66	(mesenchymal ADJ stem ADJ cell) WITH collagenase WITH bone	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:56
L13	0	(mesenchymal ADJ stem ADJ cell) WITH collagenase WITH bone WITH (purified OR isolated OR isolation)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:57
L14	0	(mesenchymal ADJ stem ADJ cell) WITH collagenase WITH bone SAME (purified OR isolated OR isolation)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/04/26 10:57

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(FILE 'HOME' ENTERED AT 13:37:51 ON 26 APR 2005)

FILE 'MEDLINE, CANCERLIT, AGRICOLA, CAPLUS, SCISEARCH' ENTERED AT
13:38:05 ON 26 APR 2005

L1 4886 S MESENCHYMAL STEM CELL
L2 67384 S TRABECULAR OR ILIAC
L3 105 S L1 (L) L2
L4 56 DUP REM L3 (49 DUPLICATES REMOVED)
L5 15 S L4 AND PY<=2001

=> d an ti so au ab 15 10

L5 ANSWER 10 OF 15 MEDLINE on STN
AN 1998184249 MEDLINE

TI Human trabecular bone cells are able to express both osteoblastic and adipocytic phenotype: implications for osteopenic disorders.

SO Journal of bone and mineral research : official journal of the American Society for Bone and Mineral Research, (1998 Mar) 13 (3) 371-82.
Journal code: 8610640. ISSN: 0884-0431.

AU Nuttall M E; Patton A J; Olivera D L; Nadeau D P; Gowen M

AB The decrease in bone volume associated with osteoporosis and age-related osteopenia is accompanied by increased marrow adipose tissue formation.

Reversal of this process may provide a novel therapeutic approach for osteopenic disorders. We have shown that cells cultured from human trabecular bone are not only osteogenic, but are able also to undergo adipocyte differentiation under defined culture conditions.

Osteoblast differentiation was induced by 1,25-dihydroxyvitamin D3 (1,25(OH)2D3) and adipocyte differentiation by dexamethasone (dex) plus 3-isobutyl-1-methylxanthine (IBMX) treatment. Adipogenesis was characterized by lineage-specific enzyme and gene activities, alpha-glycerophosphate-3-dehydrogenase activity, fatty acid binding protein, aP2 and lipoprotein lipase expression. Osteoblastogenesis was assessed by osteoblast characteristic 1,25(OH)2D3 induction of alkaline phosphatase activity and osteoblast-specific 1,25(OH)2D3-induced osteocalcin synthesis and release. We provide evidence for a common pluripotent mesenchymal stem cell that is

able either to undergo adipogenesis or osteoblastogenesis, using clonal cell lines derived from human trabecular bone cell cultures.

Adipogenesis can be induced also by long chain fatty acids and the thiazolidinedione troglitazone. Dex plus IBMX-induced adipogenesis can be inhibited by interleukin-1beta, tumor necrosis factor-alpha, and transforming growth factor-beta. Interestingly, and in contrast to extramedullary adipocyte differentiation as shown by mouse 3T3L-1 and a human liposarcoma SW872 cell line, trabecular bone adipogenesis was unaffected by insulin. Also, the formation of fully differentiated adipocytes from trabecular bone cells after troglitazone treatment and long chain fatty acids was dependent on increased expression of the nuclear hormone receptor peroxisome proliferator-activated receptor gamma2 caused by dex plus IBMX. Specific inhibition of marrow adipogenesis and promotion of osteoblastogenesis of a common precursor cell may provide a novel therapeutic approach to the treatment of osteopenic disorders.

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